# HOSPITAL LITERACY SURVEY

1991

Survey of 1990 Operational Data

A survey of the 1990 operations of 1197 hospital pharmacies provided to hospital pharmacy directors in the interest of sound management

**Eli Lilly and Company**
Lilly Corporate Center
Indianapolis, IN 46285

**Editor**
J. Michael Varnell, RPh
(317) 276-6009

**Technical Assistance**
Steven P. Ackley
Lisa C. Carver
Joyce A. Kelly
Polly S. Nobles
Lily K. Zahed

**Design**
Charles G. Russell

Copies of the *Lilly Hospital Pharmacy Survey* are provided free of charge to practicing hospital pharmacists, Lilly wholesalers, colleges of pharmacy, university libraries, pharmacy associations, the press, and selected others either directly from Eli Lilly and Company or from Lilly/Dista/Select Products sales representatives. Others wishing to order copies of the *Lilly Hospital Pharmacy Survey* may do so by calling (317) 276-3641. All orders placed through this number will be billed $30.

# TABLE OF CONTENTS


| | |
|---|---|
| CORPORATE MISSION | 2 |
| FOREWORD | 3 |
| EXECUTIVE SUMMARY<br>*Current trends in hospital pharmacy operations* | 4 |
| GEOGRAPHIC SUMMARY<br>*Selected hospital pharmacy operating data according to regional distribution* | 7 |
| PHARMACY OPERATIONS MANAGEMENT<br>*Selected operating data according to hospital profile and bed capacity* | 8 |
| INVENTORY AND PURCHASES<br>*Inventory and purchases according to hospital profile and bed capacity* | 10 |
| PHARMACY STAFF COMPENSATION<br>*Average annual payroll for pharmacy department staff components* | 13 |
| PHARMACY SERVICES<br>*Pharmacy services ranked according to the percentage of total mentions* | 14 |
| FOR-PROFIT AND ANCILLARY OPERATIONS<br>*Satellite and for-profit retail operations data according to hospital profile and bed capacity* | 15 |
| CONCLUSION | 17 |
| PRODUCTIVITY WORK SHEET | 19 |
| COMPARATIVE ANALYSIS WORK SHEET | 20 |

# ELI LILLY AND COMPANY CORPORATE MISSION

Eli Lilly and Company is a global research-based corporation that develops, manufactures, and markets pharmaceuticals, medical instruments, diagnostic products, and agricultural products.

To guide its affairs, the company follows certain fundamental principles. These principles, which we believe are in the best long-term interests of all shareholders, and society as a whole, are the following:

The company is committed to the discovery and marketing of innovative products of the highest quality that offer benefits to customers in all of our markets.

The company is dedicated to the highest levels of ethics, integrity, and excellence in research, manufacturing, marketing, and all other phases of its operations.

The company recognizes a primary responsibility to its employees because of the key role employees play in the achievement of corporate goals.

The company's objective is to attract and retain outstanding people at all levels and in all parts of the organization. It is committed to fair and equitable treatment of all employees, to the creation of an environment that recognizes the value of diversity, and to policies and programs that offer the opportunity for employees to develop meaningful and rewarding careers.

The company believes that it has an obligation to be a good corporate citizen wherever it operates, and that it has a responsibility to conduct its operations in a manner that protects human health and the environment. ■

# FOREWORD

Questionnaires sent to hospital pharmacies throughout the United States yielded 1197 usable respondents to this year's *Lilly–Hospital Pharmacy Survey*. The 1990 findings make up the 1991 *Survey*, the 15th consecutive year the report has been published. This response reflects the continuing interest of hospital pharmacists in the economic information contained in the *Survey* as well as the importance they attach to it as a resource for their management decisions. Over 54% of these respondents have participated in the *Lilly Hospital Pharmacy Survey* for 2 consecutive years.

In response to suggestions from pharmacists, an expanded analysis of available pharmacy services and use of computer applications have been added.

The *Survey* represents averages of data reported. No attempt has been made to define or structure the sample, nor does the report claim to describe what constitutes optimal or successful hospital pharmacy practice.

It is important to note that because not all respondents answered every question in the *Survey*, some of the charts and tables are based on data from fewer than the total number of participants. In some tabulations, sample sizes were not large enough to be statistically useful.

Eli Lilly and Company is pleased to provide this publication as a service to all who are interested in hospital pharmacy practice. It is hoped that the *Survey* will prove useful to managers of hospital pharmacies for both current operations analysis and for future planning. ■

# EXECUTIVE SUMMARY

Selected operating data tabulated to illustrate a composite profile of the "average" hospital pharmacy in the United States appear in Table 1. This hypothetical hospital pharmacy is derived mathematically from 1990 operating data supplied by 1197 respondents. Therefore, these figures are probably too general to be used for direct comparison. On page 20, a comparative analysis work sheet is provided for pharmacy directors to insert their data and analyze their department's individual statistics.

Table 1 shows that the average hospital had 258 beds, a 4.9% growth from the previous year. Census declined moderately from 61% to 58% during 1990. Generally, hospital census has trended lower since 1980, when it was 74%. Admissions increased 8% to around 8500 per hospital. Patient days diminished slightly to 60,651. In turn, the patient stay decreased to 7.2 days.

The number of hours the central pharmacy was open as well as hours worked by pharmacists, technicians, and support personnel all increased during 1990. Total FTEs (full-time equivalents) for pharmacy personnel increased 4% in 1990. Pharmacist hours per week experienced positive growth for the third consecutive year. Total pharmacist hours increased to 348 hours, exceeding 6% above the previous year. The combined percentage expansion in pharmacist hours during 1989-1990 represents the largest percent increase since 1981-1982.

The dollar value of inventory increased during 1990. The average hospital pharmacy inventory was approximately $171,000, which depicts a 21.8% increase over the previous year. Because of the small decrease in patient days, inventory per patient day moved upward to $2.82. As a result, inventory per bed increased to $664, inventory per occupied bed rose significantly to $1145, and inventory per admission advanced by approximately 13% to $20.21.

In 1990, purchases continued their upward climb exceeding $1.7 million per hospital pharmacy, an increase of 19.3%. Purchases per patient day, per bed, per occupied bed, and per admission were all up over previous years. Since 1985, purchases have increased about 80%, even though inventory has increased only 40%. Directors of hospital pharmacy may have had the ability to effectively utilize wholesalers to potentially hold down inventory in light of increased purchase trends. In 1990, the average inventory turnover ratio achieved by participants in the *Lilly Hospital Pharmacy Survey* was 10 times, marking the third consecutive year of at least 10 times per year.

Central pharmacy floor area increased slightly during 1990. One rationale for this could be a shift in reporting hospitals in this year's *Survey*. The 1990 sample contains a smaller percent of hospitals with less than 200 beds.

## Hospital Data

Chart 1 shows the distribution of respondents by bed capacity. The 1991 distribution of *Survey* participants by bed capacities is slightly weighted to the high side when compared with last year's data. General hospitals, which account for 59.1% of the respondents, are concentrated in the 100-199 bed capacity. Specialized

**Table 1** Average hospital pharmacy

| | **1990** *(1197 Hospitals)* | **1989** *(1643 Hospitals)* | **Percent of Change** |
|---|---|---|---|
| Bed capacity | **258** | 246 | +4.9% |
| Class | **private nonprofit** | private nonprofit | |
| Profile | **General** | General | |
| Census (beds occupied) | **58%** | 61% | |
| Admissions | **8473** | 7842 | +8.0% |
| Patient days | **60,651** | 61,194 | –0.9% |
| Length of patient stay | **7.2 days** | 7.8 days | –7.7% |
| Hours central pharmacy open/week | **102** | 98 | +4.1% |
| Pharmacist hours/week | **348 (8.7 FTE)** | 328 (8.2 FTE) | +6.1% |
| Technician hours/week | **308 (7.7 FTE)** | 299 (7.5 FTE) | +3.0% |
| Support personnel hours/week | **120 (3.0 FTE)** | 118 (3.0 FTE) | +1.7% |
| Inventory | **$171,274**<br>$2.82/patient day<br>$664/bed<br>$1145/occupied bed<br>$20.21/admission | $140, 603<br>$2.30/patient day<br>$572/bed<br>$937/occupied bed<br>$17.93/admission | +21.8%<br>+22.6%<br>+16.1%<br>+22.2%<br>+12.7% |
| Purchases | **$1,708,749**<br>$28.17/patient day<br>$6623/bed<br>$11,419/occupied bed<br>$201.67/admission | $1,432,530<br>$23.41/patient day<br>$5823/bed<br>$9546/occupied bed<br>$182.67/admission | +19.3%<br>+20.3%<br>+13.7%<br>+19.6%<br>+10.4% |
| Inventory turnover rate | **10.0** | 10.2 | |
| Floor area (central pharmacy) | **1774 sq ft** | 1758 sq ft | |

hospitals are concentrated in the more than 499 bed categories. To be classified as specialized, a hospital should offer such complex services as kidney dialysis, open heart surgery, oncology services, or burn centers. The majority of responding psychiatric hospitals are found in categories over 199 beds.

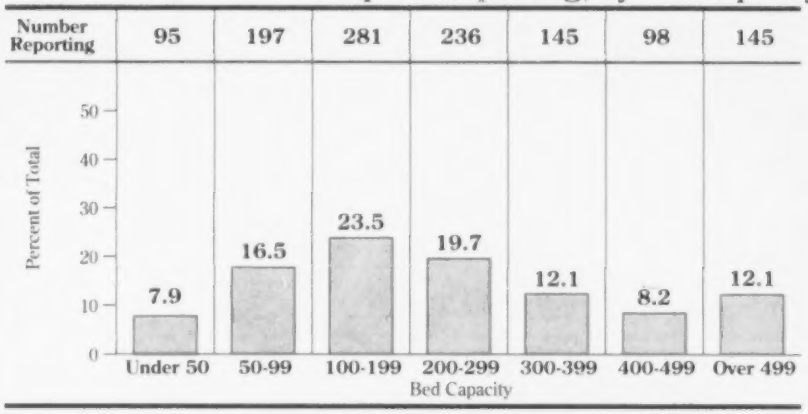
Chart 2 looks at the 1991 *Lilly Hospital Pharmacy Survey* sample according to hospital classification. Private, nonprofit facilities make up almost 65% of the sample—up slightly from last year. Government hospitals (city, county, state) account for 21.6% of the sample. It is interesting to note in Chart 3 that the for-profit hospitals included more psychiatric hospitals than specialized hospitals for the second consecutive year.

Over 84% of responding hospital pharmacies indicated they utilized a unit-dose distribution system as their primary means of drug distribution during 1990. In addition, about 89% indicated they provided full-coverage parenteral admixture service; virtually all specialized hospitals continue to offer this service.

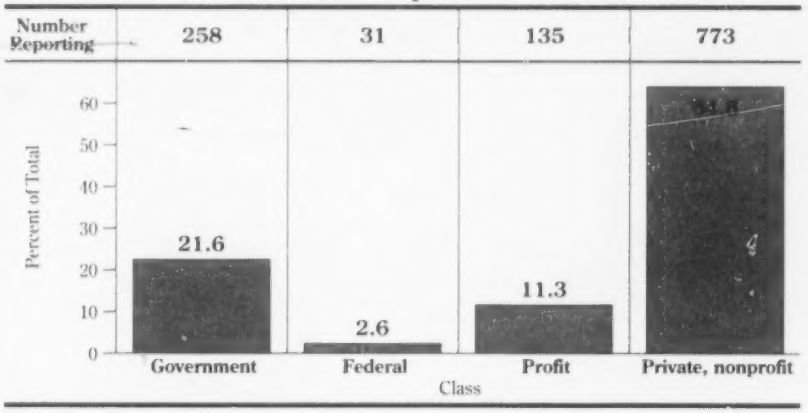
Allocation of beds by medical service in general and specialized hospitals is shown in Figures A and B. General hospitals have a large percent of general medical/surgical beds while specialized hospitals state a high percent of acute care beds that would include organ transplant, intensive care, oncology service, and burn center. As hospitals lose census in general/medical areas, they are continually evaluating potential for new areas in which to specialize in order to provide both a needed medical service to the community and a reimbursable compensation source for the hospital. Medical services, such as diabetes programs, alcohol rehabilitation, and psychiatric units, are areas where hospitals may realize such expansion.

Table 2 illustrates data in terms of patient days. In general hospitals, inventory per patient day decreased as patient days increased. In 1990, as in previous years, the highest inventory per patient day was in specialized hospitals with under 30,000 patient days. Staff payroll generally decreased as patient days increased, but was up across all categories when compared with 1989. Pharmacy hours open per week increased slightly from last year. ■

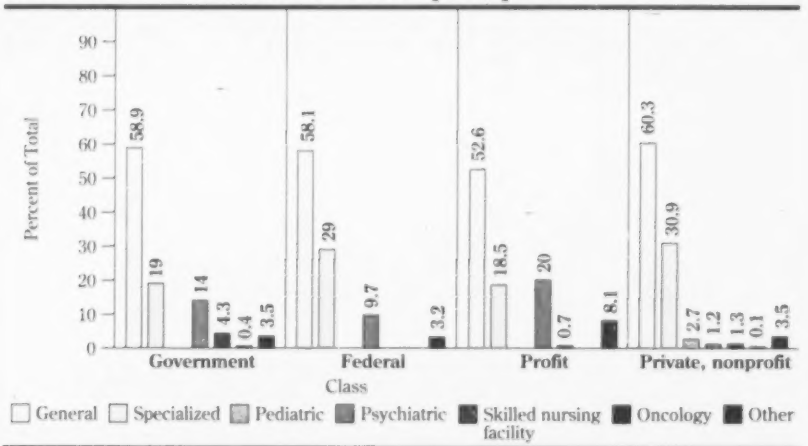
## Chart 1 Number of hospitals reporting, by bed capacity




## Chart 2 Identification of hospital classification

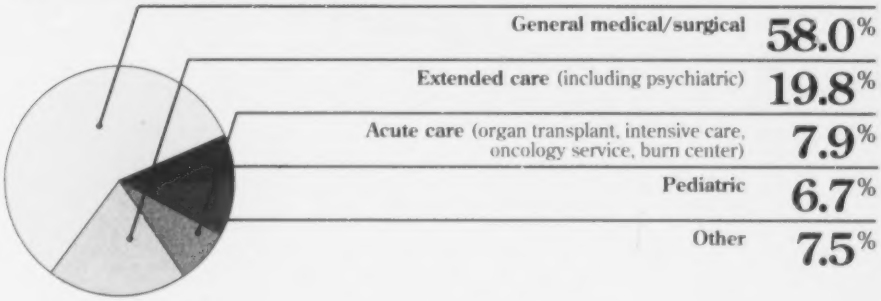



## Chart 3 Identification of hospital profile



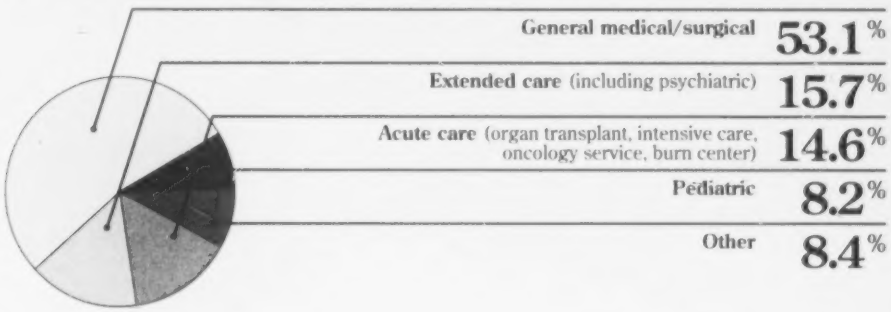
## Figure A General hospitals

Average allocation of beds by medical service


General medical/surgical 58.0%
Extended care (including psychiatric) 19.8%
Acute care (organ transplant, intensive care, oncology service, burn center) 7.9%
Pediatric 6.7%
Other 7.5%

## Figure B Specialized hospitals

Average allocation of beds by medical service


General medical/surgical 53.1%
Extended care (including psychiatric) 15.7%
Acute care (organ transplant, intensive care, oncology service, burn center) 14.6%
Pediatric 8.2%
Other 8.4%

## Table 2 Pharmacy operating data by annual patient days

### General

| Annual Patient Days | Average Bed Capacity | Average Patient Days | Admissions | Inventory/ Patient Day | Purchases/ Patient Day | Total Staff Payroll/ Patient Day | Pharmacy Hours Open/Week | Pharmacist Hours/Week | Technician Hours/Week |
|---|---|---|---|---|---|---|---|---|---|
| Under 15,000 | 81 | 8008 | 1994 | $3.99 | $24.50 | $12.53 | 56 | 73 | 60 |
| 15,000-29,999 | 128 | 22,058 | 3632 | $2.68 | $21.78 | $10.43 | 86 | 144 | 132 |
| 30,000-59,999 | 212 | 42,470 | 7645 | $2.59 | $23.59 | $ 9.82 | 109 | 278 | 238 |
| 60,000-99,999 | 315 | 73,395 | 10,357 | $2.08 | $20.66 | $ 9.47 | 129 | 424 | 345 |
| Over 100,000 | 547 | 155,746 | 17,026 | $1.53 | $16.74 | $ 7.75 | 135 | 687 | 457 |

### Specialized

| Annual Patient Days | Average Bed Capacity | Average Patient Days | Admissions | Inventory/ Patient Day | Purchases/ Patient Day | Total Staff Payroll/ Patient Day | Pharmacy Hours Open/Week | Pharmacist Hours/Week | Technician Hours/Week |
|---|---|---|---|---|---|---|---|---|---|
| Under 30,000 | 191 | 18,389 | 3629 | $3.39 | $26.02 | $13.37 | 91 | 157 | 108 |
| 30,000-59,999 | 240 | 48,104 | 7715 | $3.01 | $29.80 | $11.58 | 132 | 356 | 272 |
| 60,000-99,999 | 358 | 78,377 | 12,212 | $3.25 | $29.57 | $12.74 | 148 | 576 | 431 |
| 100,000-129,999 | 475 | 115,294 | 16,745 | $2.33 | $29.71 | $11.56 | 152 | 812 | 655 |
| Over 130,000 | 693 | 181,949 | 26,131 | $2.15 | $26.15 | $11.31 | 146 | 1191 | 964 |

# GEOGRAPHIC SUMMARY

Table 3 shows a summation of selected operating statistics organized according to geographic region. For the 15th consecutive year, the Middle Atlantic states reported the highest average bed capacity and census. It is interesting to note that the New England and the West North Central states were the only regions to show a decrease in bed capacity.

Inventory increased consistently from the previous year in each region. Purchases significantly increased with the West South Central States reporting the highest purchases per institution. The inventory turnover ratio, the number of times a hospital pharmacy purchases its inventory per year, increased in 5 regions, with the Pacific Region reporting the highest turnover ratio of 11.7 times.

The percentage of purchases from wholesalers exceeded 80% in all regions during 1990. When comparing 1990 with 1989 data, purchases through wholesalers were up by 6% in the West South Central states and the Mountain states, the largest increases of any region.

The average hospital pharmacy was open 102 hours per week in 1990, a slight increase over the previous year. It is interesting to note that 4 out of the 9 regions reported a decrease in hours open. In 3 regions, the average hospital pharmacy was open more than 100 hours per week. For the third consecutive year, pharmacist hours per week increased. Five regions, the Middle Atlantic states, West South Central states, Mountain states, East South Central states, and Pacific states, had increases of at least 40 pharmacist hours per week over 1989 figures.

Pharmacist hourly wage is derived by dividing total pharmacist payroll (staff, management, and clinical) by the total number of hours worked per week. In light of these figures being composite values, direct comparison with individual salaries should be avoided. The US average pharmacist hourly wage rose 12.2% to $22.64 in 1990. The 31% increase in pharmacist hourly wages in the West South Central states was the largest of any region. The Pacific states once again reported the highest hourly wage. ■

## Table 3 Geographic summary of selected operating data

| Region | Bed Capacity | Inventory | Purchases | Inventory Turnover Ratio* | Percent of Census | Purchases/ Occupied Bed | Percent Purchased Through Wholesaler | Pharmacy Hours Open | Pharmacist Hours/ Week | Tech. Hours/ Week | Pharmacist Hourly Wage† |
|---|---|---|---|---|---|---|---|---|---|---|---|
| New England States (CT, MA, ME, NH, RI, VT) | 238 | $151,683 | $1,423,399 | 9.4 | 68% | $ 8795 | 83% | 84 | 322 | 264 | $24.11 |
| Middle Atlantic States (NJ, NY, PA) | 309 | 177,093 | 1,827,851 | 10.3 | 76 | 7783 | 81 | 97 | 404 | 260 | 21.67 |
| East North Cent. States (IL, IN, MI, OH, WI) | 265 | 167,760 | 1,787,569 | 10.7 | 52 | 12,972 | 85 | 84 | 369 | 337 | 21.41 |
| West North Cent. States (IA, KS, MN, MO, ND, NE, SD) | 213 | 122,825 | 1,258,169 | 10.2 | 51 | 11,582 | 87 | 111 | 266 | 231 | 19.94 |
| South Atlantic States (DC, DE, FL, GA, MD, NC, SC, VA, WV) | 275 | 183,651 | 1,870,347 | 10.2 | 61 | 11,150 | 86 | 90 | 397 | 369 | 19.74 |
| East South Cent. States (AL, KY, MS, TN) | 265 | 162,848 | 1,679,737 | 10.3 | 54 | 11,738 | 87 | 100 | 386 | 367 | 21.63 |
| West South Cent. States (AR, LA, OK, TX) | 260 | 182,717 | 2,048,889 | 11.2 | 46 | 17,131 | 89 | 107 | 403 | 351 | 21.13 |
| Mountain States (AZ, CO, ID, MT, NM, NV, UT, WY) | 200 | 269,544 | 1,599,450 | 5.9 | 51 | 15,681 | 89 | 90 | 325 | 266 | 23.47 |
| Pacific States (AK, CA, HI, OR, WA) | 244 | 148,482 | 1,738,560 | 11.7 | 57 | 12,500 | 87 | 101 | 381 | 309 | 24.84 |
| United States Average | 258 | 171,274 | 1,708,749 | 10.0 | 58 | 11,419 | 86 | 102 | 348 | 308 | 22.64 |

*Estimated inventory turnover ratio = $\frac{\text{Yearly purchases at cost}}{\text{Average inventory at cost}}$

†Average for all pharmacists, including directors

# PHARMACY OPERATIONS MANAGEMENT

The data in Table 4 reflect productivity of pharmacy staffs from both general and specialized hospitals according to bed capacity. In this table, the response from specialized hospitals under 100 beds was not adequate enough to be included. The focus of Table 4 unites pharmacy department personnel to the output achieved by the departments. These data provide benchmarks with which directors can compare and assess departmental data.

The average bed capacity is found roughly in the middle of each range for general and specialized institutions, with the largest general and specialized institutions averaging 675 and 693 beds respectively. Census, central pharmacy hours open per week, and length of patient stay have upward trends as bed capacity increases regardless of hospital profiles. Larger hospitals are inclined to have longer lengths of stay since these hospitals tend to provide a broader range of services and usually treat more acutely ill patients. It is not surprising that specialized hospitals have slightly more pharmacy hours open per week than general hospitals.

One representation of pharmacy staffing is personnel hours worked per occupied bed. Among general hospitals with 100 beds or greater, pharmacists hours worked per week per occupied bed remained approximately the same regardless of size.

The specialized hospitals surveyed all required about 2.6 pharmacist hours per week per occupied bed. In specialized hospitals of 200 beds or more, technician hours worked per week per occupied bed remain relatively the same as bed capacity increases, whereas in general institutions this ratio fluctuates in a relatively narrow range across most bed capacities. Support personnel hours per week per occupied bed exceeds 1.0 only in general hospitals with less than 100 beds. Hospital pharmacies, both general and specialized, report about one half hour of support personnel time worked per week per occupied bed in hospitals of 200 beds or more. Total weekly staffing (pharmacist, technician, and support personnel) per occupied bed tends to stay around 5.3 hours in specialized hospitals with over 199 beds and about 4.4 in general hospitals with over 199 beds. These data would seem to indicate, as in previous years, that specialized hospitals need about 20% more personnel hours per occupied bed than general hospitals in order to staff sufficiently for the work load.

Total annual staff payroll per occupied bed declines quickly with rising bed capacity and then levels off to a narrow range for general and specialized hospitals with 100 beds or more. Annual staff payroll per occupied bed for specialized hospitals is usually larger than general hospitals because of the additional professional staff needed to provide extended clinical and ancillary services.

In general hospitals, average inventory per occupied bed generally declines as bed capacity increases. In the same category for specialized hospitals, inventory fluctuates mildly as bed capacity increases. Purchases per occupied bed in general hospitals fluctuate across all bed capacities, with pharmacies in smaller hospitals generally reporting higher purchases. Pharmacies in general hospitals with over 499 beds reported the lowest purchases per

## Table 4 Operations management

### General

| Operating Statistics | Under 50 | 50-99 | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|---|---|
| Average bed capacity | 37 | 73 | 138 | 238 | 334 | 440 | 675 |
| Census (%) | 37 | 44 | 52 | 59 | 60 | 64 | 72 |
| Central pharmacy hours open/week | 46 | 66 | 87 | 117 | 133 | 146 | 140 |
| Length of patient stay (days) | 4.1 | 4.3 | 4.8 | 6.4 | 6.9 | 7.4 | 8.6 |
| Pharmacist hours/week* | 3.7 | 2.9 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 |
| Technician hours/week* | 4.0 | 2.7 | 2.1 | 1.9 | 2.0 | 1.7 | 1.4 |
| Support personnel hours/week* | 1.9 | 1.6 | 0.7 | 0.4 | 0.5 | 0.7 | 0.4 |
| Total annual staff payroll* | $ 3585 | $ 3570 | $3746 | $4570 | $3526 | $ 3530 | $3309 |
| Inventory* | $ 2202 | $ 1551 | $1236 | $ 968 | $1044 | $ 1245 | $ 824 |
| Purchases* | $10,891 | $10,245 | $9876 | $9684 | $9822 | $13,066 | $8811 |
| Nonparenteral orders/week* | 111 | 108 | 92 | 99 | 84 | 120 | 73 |
| Parenteral orders/week* | 13 | 12 | 13 | 11 | 10 | 14 | 6 |
| Central pharmacy floor area (sq ft) | 396 | 704 | 1362 | 1927 | 3135 | 3142 | 3576 |
| Orders/staff hour worked | 18 | 21 | 22 | 24 | 20 | 22 | 21 |
| Productivity indicator (see page 20 for comparative work sheet) | 0.72 | 0.71 | 0.95 | 1.03 | 1.10 | 1.13 | 1.20 |

*Figured on a per-occupied-bed basis

occupied bed figure, about $8800. Purchases per occupied bed for specialized hospitals tend to stay in a narrow range around $12,000 with the highest amount of purchases in hospitals with bed capacities of 300-399.

Nonparenteral orders include unit-dose and multidose inpatient drug orders as well as outpatient prescriptions. Not included in nonparenteral orders were prescriptions from retail pharmacies that were owned and operated by the hospital. In both general and specialized hospital pharmacies, nonparenteral orders dispensed per week per occupied bed did not display an exact trend, but hospitals with more than 499 beds reported the smallest number of nonparenteral orders dispensed per occupied bed. Parenteral orders include hyperalimentation preparations, irrigation solutions, small- and large-volume IV admixtures, antineoplastic agents, and reconstitutions. General hospitals with over 499 beds reported 6 parenteral orders per week per occupied bed, the lowest of all categories. About 11 parenteral orders were dispensed per week per occupied bed in specialized hospitals with over 199 beds. By dividing the sum of all weekly medication units dispensed by the total number of weekly hours for pharmacists, technicians, and support personnel, a number for comparison can be derived. The resulting figure (orders per staff hour worked) is very general because it does not distinguish between the complexity of different types of orders; therefore, comparison to this number may not render an accurate portrayal of productivity. In general hospitals, medication orders per staff hour peaked at 200-299 beds, whereas specialized facilities were consistent between bed categories except in those hospitals exceeding 499 beds.

Productivity indicator figures were computed and are shown in Table 4. When the productivity indicator is less than 1, pharmacy staff hours in some cases may be greater than the work load requires, which would suggest possible overstaffing. An indicator of 1 suggests that pharmacy staffing and work load are in balance. An indicator above 1 implies that the pharmacy staff is generally more productive than usual.

A productivity work sheet on page 19 allows individual pharmacy directors to calculate their department's productivity for comparison with averages. Comparison of individual pharmacy productivity figures with those of hospitals of similar size and profile bears useful information, since certain efficiencies appear related to hospital size. The most meaningful data are obtained from comparing the productivity figures of an individual hospital from year to year.

Standard time values for specific tasks are shown in Table 18. The values vary by bed capacity in order to accommodate elemental differences between hospitals of varying sizes. General hospital pharmacies in the 100-199 bed capacity were the most productive of all hospital groups. Regardless of the value of the indicator, the trends across bed capacities and over time continue to be of interest and value.

It should be noted that to calculate the productivity index with a greater degree of accuracy, specific questions concerning outpatient prescriptions and multidose prescriptions were added to the 1991 *Survey*. This may account for variations of the index from the previous year. ■

## Table 4 Operations management (continued)
## Specialized

| Operating Statistics | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|
| Average bed capacity | 138 | 244 | 338 | 447 | 693 |
| Census (%) | 57 | 61 | 64 | 69 | 67 |
| Central pharmacy hours open/week | 96 | 137 | 144 | 152 | 158 |
| Length of patient stay (days) | 5.4 | 6.0 | 6.4 | 6.6 | 6.7 |
| Pharmacist hours/week* | 2.6 | 2.7 | 2.6 | 2.5 | 2.6 |
| Technician hours/week* | 2.1 | 2.1 | 2.2 | 2.0 | 2.1 |
| Support personnel hours/week* | 1.4 | 0.8 | 0.6 | 0.5 | 0.6 |
| Total annual staff payroll* | $ 4341 | $ 4322 | $ 4679 | $ 4278 | $ 4421 |
| Inventory* | $ 1487 | $ 1109 | $ 1560 | $ 988 | $ 1061 |
| Purchases* | $11,703 | $12,039 | $13,047 | $12,084 | $12,677 |
| Nonparenteral orders/week* | 93 | 103 | 100 | 90 | 88 |
| Parenteral orders/week* | 13 | 12 | 12 | 11 | 10 |
| Central pharmacy floor area (sq ft) | 1220 | 2085 | 2992 | 2985 | 4824 |
| Orders/staff hour worked | 21 | 21 | 21 | 21 | 19 |
| Productivity indicator (see page 20 for comparative work sheet) | 0.81 | 0.91 | 1.20 | 1.30 | 1.12 |

*Figured on a per-occupied-bed basis

# INVENTORY AND PURCHASES

Table 5 shows that 85% of all hospital pharmacy purchases were through wholesalers. This represents a 2 percentage point increase over the previous year.

## Table 5 Hospital pharmacy purchases from wholesalers

| Bed Capacity | 1990 (1111 Hospitals) |
|---|---|
| Under 50 | 89% |
| 50-99 | 92 |
| 100-199 | 88 |
| 200-299 | 87 |
| 300-399 | 84 |
| 400-499 | 82 |
| Over 499 | 74 |
| Average of all hospitals | 85% |

Of the hospitals reporting in this year's *Survey*, well over 90% participated in cooperative buying groups. Table 6 shows the breakdown of hospitals in cooperative buying groups based on bed capacity and hospital classification.

Table 7 examines pharmacy inventory and purchases according to hospital bed capacity. As expected, specialized hospitals generally had higher purchases per annual patient day, perhaps because more complicated procedures, which require more sophisticated pharmaceuticals, are implemented in this type of hospital. Inventory per patient day was the lowest in general hospitals with bed capacity over 499 and in specialized hospitals with bed capacity of 400-499. Inventory turnover ratio was greater for specialized hospitals than for general hospitals of similar size.

Table 8 displays hospitals that carried pharmaceuticals in addition to IV fluids and irrigation solutions in pharmacy inventory. Inventory and purchases were generally higher than those of comparable hospitals shown in Table 7.

Hospitals that reported specific data on inventory of IV fluids and irrigation solutions are shown in Table 9; the purchases for these hospitals are reported in Table 10. ■

## Table 6 Participation in cooperative buying groups

### General

| Bed Capacity | Hospital Membership |
|---|---|
| Under 50 | 92.2% |
| 50-99 | 96.9 |
| 100-199 | 96.3 |
| 200-299 | 97.0 |
| 300-399 | 98.3 |
| 400-499 | 93.1 |
| Over 499 | 91.3 |

### Specialized

| Bed Capacity | Hospital Membership |
|---|---|
| Under 100 | 100.0% |
| 100-199 | 95.0 |
| 200-299 | 98.6 |
| 300-399 | 94.1 |
| 400-499 | 98.1 |
| Over 499 | 91.6 |

## Table 7 Pharmacy inventory and purchases by bed capacity

### General

| Bed Capacity | Inventory | Purchases | Inventory Turnover Ratio* | Annual Patient Days | Inventory/ Patient Day | Purchases/ Patient Day |
|---|---|---|---|---|---|---|
| Under 50 | $ 30,150 | $ 149,100 | 5.0 | 5098 | $5.91 | $29.25 |
| 50-99 | 49,833 | 329,076 | 6.6 | 11,820 | 4.22 | 27.84 |
| 100-199 | 88,699 | 708,713 | 8.0 | 26,049 | 3.41 | 27.21 |
| 200-299 | 135,864 | 1,359,852 | 10.0 | 51,219 | 2.65 | 26.55 |
| 300-399 | 209,272 | 1,968,300 | 9.4 | 73,253 | 2.86 | 26.87 |
| 400-499 | 350,560 | 2,618,377 | 7.5 | 101,034 | 3.47 | 25.92 |
| Over 499 | 400,261 | 4,282,144 | 10.7 | 176,660 | 2.27 | 24.24 |

### Specialized

| Bed Capacity | Inventory | Purchases | Inventory Turnover Ratio* | Annual Patient Days | Inventory/ Patient Day | Purchases/ Patient Day |
|---|---|---|---|---|---|---|
| 100-199 | $116,964 | $ 920,567 | 7.9 | 28,166 | $4.15 | $32.68 |
| 200-299 | 165,009 | 1,791,939 | 10.9 | 54,104 | 3.05 | 33.12 |
| 300-399 | 337,461 | 2,822,280 | 8.4 | 78,839 | 4.28 | 35.80 |
| 400-499 | 304,595 | 3,726,913 | 12.2 | 112,016 | 2.72 | 33.27 |
| Over 499 | 492,490 | 5,886,214 | 12.0 | 167,095 | 2.95 | 35.23 |

*Estimated inventory turnover ratio = $\frac{\text{Yearly purchases at cost}}{\text{Average inventory at cost}}$

## Table 8 Pharmacy inventory and purchasing (including IV fluids, irrigation solutions, and other pharmaceuticals) by bed capacity

### General

| Bed Capacity | Inventory | Purchases | Inventory Turnover Ratio* | Annual Patient Days | Inventory/ Patient Day | Purchases/ Patient Day |
|---|---|---|---|---|---|---|
| Under 100 | $ 53,029 | $ 341,471 | 6.4 | 11,820 | $4.49 | $28.89 |
| 100-199 | 91,814 | 779,711 | 8.5 | 26,049 | 3.52 | 29.93 |
| 200-299 | 135,130 | 1,345,893 | 10.0 | 51,219 | 2.64 | 26.28 |
| 300-399 | 205,538 | 2,315,012 | 11.3 | 73,253 | 2.81 | 31.60 |
| 400-499 | 267,069 | 3,145,583 | 11.8 | 101,034 | 2.64 | 31.13 |
| Over 499 | 399,521 | 4,735,277 | 11.9 | 176,660 | 2.26 | 26.80 |

### Specialized

| Bed Capacity | Inventory | Purchases | Inventory Turnover Ratio* | Annual Patient Days | Inventory/ Patient Day | Purchases/ Patient Day |
|---|---|---|---|---|---|---|
| 100-199 | $133,545 | $1,195,505 | 9.0 | 28,166 | $4.74 | $42.44 |
| 200-299 | 174,247 | 1,910,475 | 11.0 | 54,104 | 3.22 | 35.31 |
| 300-399 | 244,791 | 2,704,834 | 11.1 | 78,839 | 3.11 | 34.31 |
| 400-499 | 292,351 | 3,840,477 | 13.1 | 112,016 | 2.61 | 34.29 |
| Over 499 | 496,643 | 5,909,479 | 11.9 | 167,095 | 2.97 | 35.37 |

*Estimated inventory turnover ratio = $\frac{\text{Yearly purchases at cost}}{\text{Average inventory at cost}}$

## Table 9 Pharmacy inventory (including IV fluids and irrigation solutions)

### General

| Bed Capacity | Under 100 | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|---|
| IV and irrigation fluids | $ 4985 | $ 8567 | $ 11,012 | $ 12,981 | $ 35,918 | $ 68,924 |
| Other pharmaceuticals | 48,044 | 83,247 | 124,118 | 192,557 | 267,069 | 363,603 |
| Total annual inventory | $53,029 | $91,814 | $135,130 | $205,538 | $302,987 | $432,527 |

### Specialized

| Bed Capacity | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|
| IV and irrigation fluids | $ 13,642 | $ 13,316 | $ 13,774 | $ 30,806 | $36,330 |
| Other pharmaceuticals | 119,903 | 160,931 | 231,810 | 261,545 | 460,313 |
| Total annual inventory | $133,545 | $174,247 | $245,584 | $292,351 | $496,643 |

## Table 10 Pharmacy purchases (including IV fluids and irrigation solutions)

### General

| Bed Capacity | Under 100 | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|---|
| IV and irrigation fluids | $ 33,537 | $ 86,272 | $ 125,167 | $ 216,153 | $ 275,888 | $ 782,187 |
| Other pharmaceuticals | 320,425 | 693,439 | 1,220,726 | 2,098,859 | 2,869,695 | 3,953,090 |
| Total annual purchases | $353,962 | $779,711 | $1,345,893 | $2,315,012 | $3,145,583 | $4,735,277 |

### Specialized

| Bed Capacity | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|
| IV and irrigation fluids | $ 104,978 | $ 180,132 | $ 265,309 | $ 474,750 | $ 549,141 |
| Other pharmaceuticals | 1,090,527 | 1,730,343 | 2,439,525 | 3,365,727 | 5,360,338 |
| Total annual purchases | $1,195,505 | $1,910,475 | $2,704,834 | $3,840,477 | $5,909,479 |

# PHARMACY STAFF COMPENSATION

Average annual payroll for each of the 3 pharmacy department staff components as well as hours worked per week are illustrated in Table 11 according to bed capacity and hospital profile. The average hourly wage figures for pharmacists, technicians, and support personnel may render beneficial comparisons. Direct comparison with individual salaries should be avoided because table figures are composite values. This is especially relevant for pharmacists, since the difference in salary between an entry-level staff pharmacist and a senior director can be significant. In general and specialized institutions, a trend in average hourly wages cannot be seen based on bed size. The overall composite hourly wage for pharmacists is about $22, while hourly technicians' wages range from $9 to $12. Technician wages tend to be about 10% higher in specialized hospitals of 100-199 beds than in general hospitals of similar size. Larger, more sophisticated institutions that offer extended services tend to report higher professional and nonprofessional data for staffing and payroll than do smaller institutions.

A review of *Survey* statistics indicates that pharmacists are employed about 2.5 hours per week per occupied bed, whereas the rate for technicians is about 2.3 hours. These figures represent a slight expansion in pharmacist and technician hours from the previous year.

*Survey* data concerning time spent on different functions indicate that about 67% of pharmacists' time is spent on drug distribution, about 16% on management duties, and about 17% on clinical practice. This shows a 2 percentage point shift in pharmacist distribution time to clinical services when compared with the figure for the previous year.

Volunteer hours per week exceed one half FTE for most categories. It appears that this present level of activity is helpful but probably not a major consideration for maximum efficiency. ■

## Table 11 Pharmacy personnel hours and payroll

### General

| Bed Capacity | Pharmacist Hours/Week | (FTE) | Annual Pharmacist Payroll | Technician Hours/ Week | Annual Technician Payroll | Support Personnel Hours/Week | Annual Support Personnel Payroll | Total Annual Payroll | Payroll/ Patient Day | Volunteer Hours/ Week |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 50 | 51 | (1) | $ 53,832 | 54 | $ 28,365 | 26 | $ 6867 | $ 132,642 | $26.02 | 40 |
| 50-99 | 93 | (2) | 96,570 | 85 | 41,260 | 50 | 20,675 | 260,644 | 22.05 | 23 |
| 100-199 | 169 | (4) | 178,430 | 148 | 75,977 | 52 | 25,208 | 516,994 | 19.85 | 14 |
| 200-299 | 321 | (8) | 359,612 | 260 | 134,454 | 62 | 33,009 | 641,706 | 12.53 | 23 |
| 300-399 | 438 | (11) | 482,431 | 392 | 195,782 | 99 | 42,981 | 706,689 | 9.65 | 28 |
| 400-499 | 576 | (14) | 700,984 | 476 | 299,376 | 194 | 74,121 | 993,987 | 9.84 | 21 |
| Over 499 | 941 | (23) | 1,078,484 | 672 | 407,380 | 191 | 89,227 | 1,608,249 | 9.10 | 32 |

### Specialized

| Bed Capacity | Pharmacist Hours/Week | (FTE) | Annual Pharmacist Payroll | Technician Hours/ Week | Annual Technician Payroll | Support Personnel Hours/Week | Annual Support Personnel Payroll | Total Annual Payroll | Payroll/ Patient Day | Volunteer Hours/ Week |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 100 | 126 | (3) | $ 136,795 | 97 | $ 41,784 | 40 | $ 11,550 | $ 177,329 | $15.63 | 11 |
| 100-199 | 208 | (5) | 235,095 | 163 | 90,141 | 107 | 56,194 | 341,456 | 12.12 | 14 |
| 200-299 | 401 | (10) | 438,040 | 317 | 150,375 | 121 | 57,918 | 643,264 | 11.89 | 22 |
| 300-399 | 564 | (14) | 697,088 | 479 | 269,276 | 131 | 68,117 | 1,012,177 | 12.84 | 19 |
| 400-499 | 768 | (19) | 930,881 | 614 | 402,669 | 140 | 84,175 | 1,319,560 | 11.78 | 64 |
| Over 499 | 1189 | (29) | 1,418,297 | 985 | 497,419 | 261 | 119,956 | 2,052,491 | 12.28 | 39 |

# PHARMACY SERVICES

As a follow-up to pharmacists' requests, the lists of pharmacy services (Table 12) and computer applications (Table 13) have been expanded. *Survey* participants were asked to record the specific pharmacy services offered as part of their procedures. Table 12 lists percentages of general and specialized hospitals offering selected services. Most pharmacy services were listed more frequently by specialized hospitals than general hospitals.

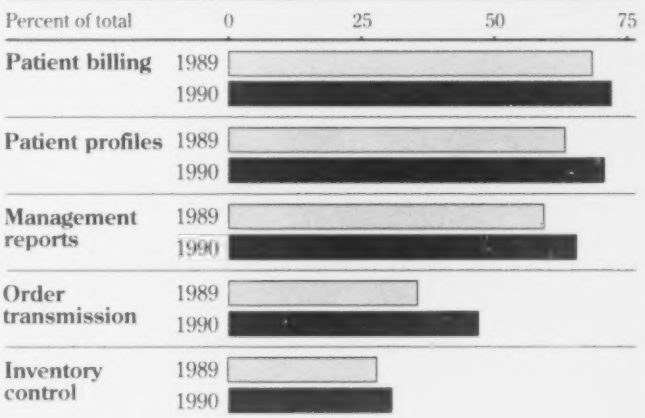
During 1990, over 71% of hospital pharmacies participating in the *Survey* reported using computers in some facet of their operation. Patient billing, as shown in Table 13, continues to be the application most widely used. Larger hospitals reported using computers in a wide area of the hospital pharmacy, from monitoring patient profiles to drug utilization evaluation.

Now with software program advancements similar to hardware developments, computerization may potentially be affordable for all hospitals in the near future. Indeed, as more information is being requested of hospital pharmacy directors, computers may well become a necessity for all hospitals very soon. Chart 4 shows the increase of computer uses from 1989 to 1990. ■

## Table 12 Pharmacy services offered

| | General | Specialized |
|---|---|---|
| Monitoring drug interactions | 93.9% | 96.9% |
| Drug utilization evaluation | 94.3 | 97.2 |
| In-service education | 87.8 | 91.9 |
| Monitoring patient profiles | 95.2 | 96.6 |
| Consultation with physicians | 80.2 | 85.4 |
| Drug information service | 75.7 | 81.1 |
| Regular pharmacy bulletin | 60.3 | 79.5 |
| Training programs | 56.2 | 79.8 |
| Pharmacokinetic service | 45.1 | 64.3 |
| Responding to CPR attempts | 29.6 | 30.1 |
| Patient counseling | 29.8 | 46.3 |
| Patient discharge interviews | 15.3 | 21.7 |
| Making rounds with physicians | 11.2 | 43.5 |
| Administration of drugs | 3.7 | 3.1 |
| Patient admission interviews | 4.0 | 5.9 |

## Chart 4 Computer Applications (1989-1990)




## Table 13 Computer application according to bed capacity

| | Total | Under 50 | 50-99 | 100-199 | 200-299 | 300-399 | 400-499 | Over 499 |
|---|---|---|---|---|---|---|---|---|
| Patient billing | 71.8% | 43.2% | 61.4% | 72.6% | 83.9% | 79.3% | 78.6% | 71.7% |
| Drug information | 42.6 | 17.9 | 24.9 | 37.4 | 46.6 | 54.5 | 58.2 | 64.1 |
| Patient profiles | 70.6 | 32.6 | 55.8 | 65.5 | 88.1 | 81.4 | 88.1 | 84.1 |
| Bar code scanning | 8.4 | 3.2 | 2.5 | 5.0 | 8.9 | 11.7 | 10.2 | 20.7 |
| Management report | 65.3 | 30.5 | 50.3 | 61.9 | 72.0 | 77.2 | 84.7 | 79.3 |
| Pharmacokinetic service | 38.8 | 23.2 | 33.0 | 37.4 | 43.2 | 42.1 | 38.8 | 49.0 |
| Order transmission | 46.9 | 23.2 | 28.9 | 42.0 | 53.4 | 63.4 | 58.2 | 61.4 |
| Drug utilization evaluation | 48.7 | 26.3 | 29.9 | 48.0 | 56.4 | 60.7 | 61.2 | 57.2 |
| Inventory control | 30.7 | 14.7 | 18.8 | 26.0 | 37.3 | 35.2 | 45.9 | 41.4 |

# FOR-PROFIT AND ANCILLARY OPERATIONS

The increase in recent years of for-profit operations by hospitals and hospital pharmacies is reinforcing the fact that areas other than traditional hospital pharmacy are being evaluated to boost revenues. As the length of patient stays continues on a downward trend, patients may need skilled care at home. This year about 34% of the respondents to the *Survey* operate for-profit home health care businesses. Table 14 exhibits the percent of hospitals operating a home health care business and the services they provide. The percent of hospitals operating a home health care business advanced in all reported segments except general hospitals over 399 beds. Services most routinely offered by these home health care businesses are antibiotic therapy, fluid therapy, and pain management therapy.

It has been a logical progression for many hospitals to extend their services into retail pharmacy. An ideal site for a retail pharmacy is a medical building adjacent or attached to the hospital. Commonly, these buildings are owned by the hospital. Often hospital pharmacies may be more efficient if they operate a retail pharmacy since outpatient prescriptions can be filled at the retail pharmacy, thus allowing the hospital pharmacy to concentrate on inpatient services only. Of course, records must be adequately maintained to show that products purchased at special "nonprofit" prices are not sold in for-profit pharmacies.

About 17% of all responding hospitals now operate for-profit retail pharmacies. Table 15 exhibits the percentages of hospitals by bed capacity that are operating for-profit retail pharmacies. There was a dramatic decrease in the percent of specialized hospitals with over 499 beds operating for-profit retail pharmacies. This year, 37% of these hospitals operated retail pharmacies in contrast to 57% the previous year.

Operating data of for-profit retail pharmacies by bed capacity is shown in Table 16. Average annual prescription sales for all for-profit retail pharmacies was about $815,367, a 4.2% growth over the previous year. This is significantly higher than the $584,539 in prescription sales reported by the average retail pharmacy in the 1990 *Lilly Digest*.[1] The average prescription charge for these pharmacies increased to $18.46, up from $15.43 the previous year. It will be interesting to monitor these trends throughout the 1990s.

Hospital pharmacies have been able to generate an inventory turnover ratio of approximately 10 for the past 2 years. This skill seems to have been transferred from hospital pharmacies to the for-profit retail pharmacies, which reported an inventory turnover ratio of 9.5. This compares very favorably with the *Lilly Digest* respondents, who reported a ratio of 5.4.

Average satellite pharmacy operating data tabulated for general and specialized hospitals are depicted in Table 17. It is apparent

**Table 14** Hospitals operating for-profit home health care businesses and services offered

## General

| Bed Capacity | Percent of Total | Durable Medical Equipment | Total Parenteral Nutrition | Oncology Therapy | Nutrition Counseling | Oxygen Service | Antibiotic Therapy | Pain Management Therapy | Fluid Therapy |
|---|---|---|---|---|---|---|---|---|---|
| Under 100 | 35% | 71% | 53% | 33% | 71% | 79% | 80% | 67% | 87% |
| 100-199 | 43 | 68 | 62 | 48 | 67 | 66 | 89 | 68 | 86 |
| 200-299 | 75 | 86 | 65 | 64 | 62 | 75 | 75 | 78 | 79 |
| 300-399 | 56 | 75 | 79 | 75 | 55 | 80 | 85 | 83 | 82 |
| Over 399 | 38 | 80 | 60 | 40 | 50 | 75 | 60 | 40 | 80 |

## Specialized

| Bed Capacity | Percent of Total | Durable Medical Equipment | Total Parenteral Nutrition | Oncology Therapy | Nutrition Counseling | Oxygen Service | Antibiotic Therapy | Pain Management Therapy | Fluid Therapy |
|---|---|---|---|---|---|---|---|---|---|
| Under 200 | 75% | 50% | 100% | 100% | 100% | 50% | 100% | 100% | 100% |
| 200-299 | 37 | 50 | 57 | 50 | 29 | 71 | 75 | 71 | 71 |
| 300-399 | 49 | 86 | 79 | 79 | 69 | 79 | 80 | 80 | 79 |
| 400-499 | 53 | 86 | 93 | 80 | 85 | 62 | 100 | 93 | 93 |
| Over 499 | 60 | 64 | 72 | 80 | 63 | 57 | 84 | 84 | 92 |

that as bed capacity expands, the percentage of pharmacies offering satellite pharmacy services also increases, regardless of profile. About 23% of respondents have satellite pharmacy services as compared with 21% the previous year. Over 64% of the hospitals with 500 beds or more have satellite pharmacies. ■

1. 1990 *Lilly Digest*, Table 1, page 3.

## Table 15 Hospitals operating for-profit retail pharmacies

### General

| Bed Capacity | Percent of Total |
|---|---|
| Under 200 | 9% |
| 200-299 | 19 |
| 300-399 | 22 |
| 400-499 | 17 |
| Over 499 | 35 |

### Specialized

| Bed Capacity | Percent of Total |
|---|---|
| Under 200 | 15% |
| 200-299 | 23 |
| 300-399 | 28 |
| 400-499 | 42 |
| Over 499 | 37 |

## Table 16 Operating data of for-profit retail pharmacies

### All hospitals responding

| Bed Capacity | Average Number of Prescriptions | Annual Prescription Sales | Average Prescription Cost | Average Inventory | Annual Purchases | Hours Open/ Week | Pharmacist Hours/ Week | Technician Hours/ Week |
|---|---|---|---|---|---|---|---|---|
| Under 200 | 15,546 | $ 253,211 | $16.38 | $ 50,231 | $ 246,464 | 54 | 49 | 54 |
| 200-299 | 42,004 | 615,313 | 14.65 | 62,035 | 404,520 | 59 | 70 | 73 |
| 300-399 | 49,924 | 885,883 | 17.74 | 71,432 | 631,828 | 63 | 78 | 85 |
| 400-499 | 38,096 | 851,117 | 22.34 | 81,337 | 840,429 | 56 | 84 | 74 |
| Over 499 | 69,461 | 1,471,328 | 21.18 | 124,910 | 1,390,772 | 52 | 103 | 118 |

## Table 17 Satellite pharmacy operations

### General

| Bed Capacity | Percent Operating Satellites | Percent Operating 2 or More Satellites* | Hours Open/ Week† | Pharmacist Hours/Week† | Technician Hours/Week† |
|---|---|---|---|---|---|
| Under 300 | 19% | 30% | 62 | 84 | 86 |
| 300-399 | 26 | 43 | 44 | 61 | 47 |
| 400-499 | 28 | 43 | 50 | 69 | 84 |
| Over 499 | 65 | 87 | 56 | 63 | 42 |

### Specialized

| Bed Capacity | Percent Operating Satellites | Percent Operating 2 or More Satellites* | Hours Open/ Week† | Pharmacist Hours/Week† | Technician Hours/Week† |
|---|---|---|---|---|---|
| Under 300 | 34% | 58% | 48 | 63 | 31 |
| 300-399 | 50 | 50 | 73 | 83 | 81 |
| 400-499 | 50 | 69 | 60 | 76 | 69 |
| Over 499 | 79 | 79 | 65 | 89 | 77 |

*Percentages figured from hospitals reporting 1 or more satellite pharmacies.
†Per satellite

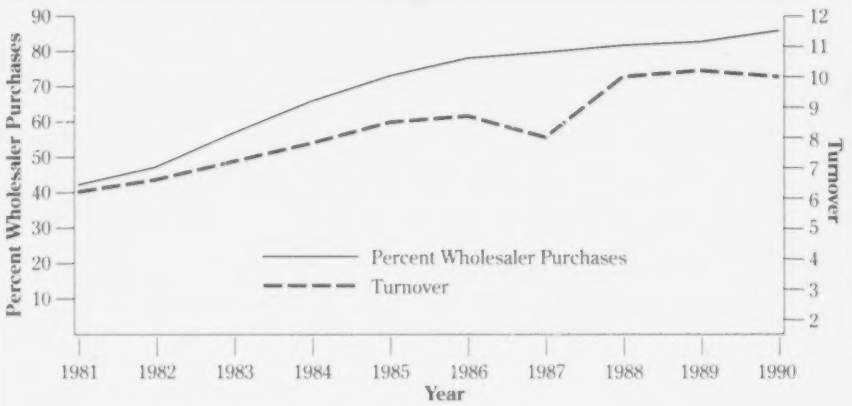
# CONCLUSION

Hospital pharmacy management is continuously challenged to improve operational efficiency, control cost, and expand services. One of the challenges accomplished by hospital pharmacists in the 1980s was improved inventory management. Inventory turnover has risen from 5.7 times in 1981 to 10 times in 1990. This increase in turnover rate may be related to the upward trends in wholesaler purchases. This relationship is illustrated in Chart 5.

Hospital pharmacies have achieved success in expanding services to areas such as home health care and for-profit retail pharmacies. The ability of hospital pharmacies to remain successful and profitable in these businesses will be further challenged in the future by the growing competitiveness of the marketplace.

If hospital managers are to be prosperous in the long-term, it is essential that they analyze and remain aware of emerging trends. It is the hope of Eli Lilly and Company that this *Survey* will contribute to the success of hospital pharmacy now and in the future. ■

**Chart 5** Average hospital pharmacy turnover and percent wholesaler purchases (1981-1990)



## Table 18 Standard time values (minutes)–for use on productivity work sheet

| Bed Capacity | < 50 | 50-99 | 100-199 | 200-299 | 300-399 | 400-499 | ≥ 500 | Average |
|---|---|---|---|---|---|---|---|---|
| **Task** | | | | | | | | |
| Unit dose | 2.46 | 2.02 | 2.13 | 2.06 | 2.58 | 2.41 | 2.86 | 2.36 |
| Hyperalimentation | 31.75 | 26.07 | 27.47 | 26.66 | 33.26 | 31.11 | 36.92 | 30.46 |
| Large-volume IV (additives) | 5.39 | 4.42 | 4.66 | 4.52 | 5.64 | 5.28 | 6.26 | 5.17 |
| Small-volume IV (additives) | 5.98 | 4.91 | 5.17 | 5.02 | 6.26 | 5.86 | 6.95 | 5.73 |
| Multidose prescription (inpatient) | 4.06 | 3.33 | 3.51 | 3.41 | 4.25 | 3.98 | 4.72 | 3.89 |
| Prescription (outpatient) | 8.14 | 6.68 | 7.04 | 6.83 | 8.53 | 7.98 | 9.47 | 7.81 |
| Large-volume IV (no additives) | 4.06 | 3.33 | 3.51 | 3.41 | 4.25 | 3.98 | 4.72 | 3.89 |
| Antineoplastic agents (injection) | 26.36 | 21.65 | 22.81 | 22.14 | 27.62 | 25.88 | 30.66 | 25.29 |

# PRODUCTIVITY WORK SHEET

May be calculated for any time period; however, weekly is indicated on this form.

## PHARMACY WORK LOAD

| Task | Standard Time Value (minutes)* | × | Work Units Performed Weekly | = | Total Standard Time (minutes) |
|---|---|---|---|---|---|
| Unit dose | | × | | = | |
| Hyperalimentation | | × | | = | |
| Large-volume IV (additives) | | × | | = | |
| Small-volume IV (additives) | | × | | = | |
| Multidose prescriptions (inpatient) | | × | | = | |
| Prescriptions (outpatient) | | × | | = | |
| Large-volume IV (no additives) | | × | | = | |
| Antineoplastic agents (injection) | | × | | = | |
| | | | | | **Total** |

**Total standard work load hours** = $\frac{\text{total standard time (minutes)}}{60}$ = $\frac{\text{Total}}{60}$ =

## PHARMACY STAFF HOURS

| Pharmacy Staff | Available Hours Weekly |
|---|---|
| Pharmacist (drug distribution) | |
| Pharmacist (management) | |
| Pharmacist (clinical practice) | |
| Technician (drug distribution) | |
| Support personnel | |
| | **Total Available Hours Weekly** |

**Productivity indicator** = $\frac{\text{total standard work load hours}}{\text{total available hours weekly}}$ = _____ = _____ †

*Choose appropriate standard time value from Table 18 on page 18.

†If the productivity indicator is less than 1, there may be more pharmacy staff time available than the pharmacy work load requires, and the possibility of overstaffing exists. A productivity indicator of 1 suggests that pharmacy staff hours and work load are in balance. When the indicator exceeds 1, the pharmacy department is generally more productive than usual. Refer to Table 4 comparative indicators.

# COMPARATIVE ANALYSIS WORK SHEET

*If you wish to perform your own analysis, this work sheet may be useful to you.*

It is most useful for both *Survey* comparison and trend analysis to express operating statistics in terms of occupied beds or patient days.

If your pharmacy's operating data are affected by any of the variables that appear beneath each entry, adjust the comparative figure by consulting the appropriate table listed.

1. Hospital profile
   - General ☐
   - Specialized ☐
   - Other ☐
2. Bed capacity _____
3. Census _____ %
4. Beds occupied _____ (multiply line 2 by line 3)
5. Patient days _____ (multiply line 4 by 365)
6. Geographic location (see Table 3) _____

| Operating Data | 1990 Data | 1989 Data | *Survey* Data (comparable category) |
|---|---|---|---|
| *Inventory* (at cost)*<br>Use Table 7 for averages and Table 3 to adjust for geographic variation.<br>Refer to Table 8 if inventory includes IV fluids or irrigation solutions<br>Per occupied bed or patient day | $ _____<br>$ _____ | $ _____<br>$ _____ | $ _____<br>$ _____ |
| *Purchases* (at cost)*<br>Use Table 7 for averages and Table 3 to adjust for geographic variation.<br>Refer to Table 8 if purchases include IV fluids or irrigation solutions<br>Per occupied bed or patient day | $ _____<br>$ _____ | $ _____<br>$ _____ | $ _____<br>$ _____ |
| *Estimated inventory turnover ratio†*<br>Use Table 7 for averages | _____ times | _____ times | _____ times |
| *Pharmacist hours worked per week*<br>Use Table 11 for averages | _____ hours | _____ hours | _____ hours |
| *Technician hours worked per week*<br>Use Table 11 for averages | _____ hours | _____ hours | _____ hours |
| *Pharmacy hours open per week*<br>Use Table 4 for averages | _____ hours | _____ hours | _____ hours |
| Total annual payroll<br>Use Table 11 for averages | $ _____ | $ _____ | $ _____ |
| *Pharmacy floor area*<br>Use Table 4 for averages | _____ sq ft | _____ sq ft | _____ sq ft |

*Include prescription drugs, IV fluids, and irrigation solutions if normally in pharmacy's budget.

†Estimated inventory turnover rate = $\frac{\text{Yearly purchases at cost}}{\text{Average inventory at cost}}$

60-DR-0818-0 PRINTED IN USA 100186-129122 © 1991, ELI LILLY AND COMPANY